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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/837,897 | 04/18/2001 | Stephen Allott | 20408002000 | 8333 |

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EXAMINER

BETTENDORF, JUSTIN P

ART UNIT PAPER NUMBER

2817

DATE MAILED: 08/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,897

Applicant(s)

ALLOTT, STEPHEN

Examiner

Justin P. Bettendorf

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. Figures 3A-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see brief description on page 3 with respect to figure 4 "known"). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because the gates of the FETs are not shown in 60. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: On page 4, line 21 recites "Where $V_{t0} V_t(V_{SB}=0)$ ", which appears to be missing a verb. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (i.e. figures 1-4) and description thereof (hereinafter referred to as "AAPA") Brahmhatt United States Patent No. 4,442,481.

The AAPA figure 4 shows an integrated transconductance cell comprising a plurality of current sources 62-65 with a variable load 60 with first and second load FETs shown and a pair

of serially connected MOSFETs acting as a variable resistor. However, the AAPA does not show the MOSFETs as native MOSFETs.

Brahmbhatt teaches that native MOSFETs are art-recognized equivalent to enhancement mode MOSFETs but have a very low threshold voltage that additionally does not require additional doping; therefore, unwanted manufacturing variations are reduced (see col. 9, lines 1-20).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the art-recognized equivalent native MOSFETs as taught by Brahmbhatt in place of the generic MOSFETs in the transconductance cell of AAPA figure 4 because such a modification would have been considered a mere substitution of art-recognized equivalent MOSFETs that would have advantageously not required additional doping in an integrated structure.

With respect to claims 4-10, it should be noted that the use of the transconductance cell is given no patentable weight in the apparatus claim; therefore, limitations drawn to the intended use of the device (i.e. further defining the system or suggestion of use in a VCO) have been given no patentable weight (see MPEP 2114).

With respect to claim 13, AAPA figure 1 suggests the method of utilizing transconductance cell-based gyrators in a filter in a radio system.

With respect to claims 14-17, AAPA figure 3A suggests using the transconductance cell in a gyrator.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Schaumann "Simulating Lossless Ladders with Transconductance-C Circuits" monograph from IEEE Transactions on Circuits was stated as prior art in the present application.

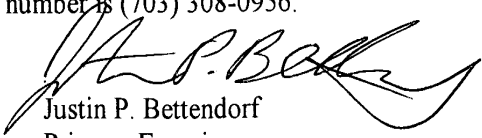
b. Boudewijns United States Patent No. 4,972,098 discloses a variable resistor having MOS transistors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P. Bettendorf whose telephone number is (703) 308-2780.

The examiner can normally be reached on 6:00-3:30 (M-F, 1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Justin P. Bettendorf
Primary Examiner
Art Unit 2817

jpb
August 7, 2002